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(54) Title: INHIBITORS OF CORONAVIRUS

1 MFIFLLFLTLTSGSDLDRCCTTFDDVQAPNYTQHTSSMRGVVYYPDEIFRSD  
51 TLYLTQDLFLFFYSNVTFGHTINHTFGNFVFPKDGIFYFAATEKSNVVRG  
101 WVFSGTMNNKSQSVIIINNSTNVVIRACNFELCDNPFPAVSKPMGTQHT  
151 MIFDNFNCFTFEYISDAFSLDVSEKSGNFKHLRFVFKKNDGFLYVYKGY  
201 QPIDVVRDLPSGFNTLKPIFKLPLGINITNFRAILTAFAQDIWGTSA  
251 AYFVGYLKPTTFMLKYDENGITDAVDCSQNPLAELKCSVKSFIDKGIY  
301 QTSNFRVVPDGDVVRFPNITNLCPPEVFNATKPSVYAWERKKISNCVA  
351 DYSVLVNSTFFSTFKCYGVSATKLNLDLCPFNVYADSFVVGDEVRQIAPG  
401 QTGVIAADYNKLPDDFMGCVLAWNTRNIDATSTGNVNYKYRLRHGKLRP  
451 FERDISNVVPSPDGKPTPPALNCYWPLNDYGFYTTTGIGYQPYRVVLS  
501 FELLNAPATVCGPKLSTDLIKNQCVNFNFGLTGTGVLTPSSKRFQPPQQ  
551 PGRDVSDFDTSVRDPKTSEILDISPACFGGVSVITPGTNASSEVAVLYQD  
601 VNCTDVSTAIHADQLTPAWRIYSTGNVFPQTQAGCLIGAEHVDTSYECDI  
651 PIGAGICASYHTVSLRSTSQKSIVAYTMSLGADSSIAYSNNTIAIPTNF  
701 SISITTEVMPVSMKTSVDCNMYICGDSTECANLLQYGSFCTQLNRALS  
751 GIAAEQDRNTRREVFAQVKQMYKTPTLKYFGGFNFSQILPDPLKPTKRSFI  
801 EDLLFNKVTLADAGFMKQYGECLGDINARDLCAQKFNGLTVLPPLLTDD  
851 MIAAYTAALVSGTATAGWTFGAGAAQIPFAMQMAYRFNGIGVTQNVLYE  
901 NQKQIANQFNKAI SQIQESLTTTSTALGKLQDVVNQNAQALNTLVKQLSS  
951 NFGAISSVLNDILSRDLKVEAEVQIDRLITGRLOSLQTYVTQQLIRAAEI  
1001 RASANLAATKMSECVLGQSKRVDFCCGKYHLMSPQAAPHGVVFLHVTYV  
1051 PSQERNFTTAPACHGKAYFPREGVVFVNGTSWFITQRNFFSPQIITTD  
1101 NTFVSGNCDVVGIIINNTVYDPLQPELDSFKEELDKYFKNHTSPDVLGD  
1151 ISGINASVVNIQKEIDRLNEVAKNLNBSLIDLQELQKYEQYIKWPWYVWL  
1201 GFIAGLIAIVMTILLCCMTSCCCLKGACSCGSCCKFDEDDSEFVLKGV  
1251 KLHYT

(57) Abstract: The present invention relates to inhibitors of coronaviruses including severe acute respiratory syndrome (SARS); methods of identifying inhibitors of coronaviruses; methods and compositions useful for therapy (treatment, or prevention) of coronavirus infections. The coronavirus inhibitors target different regions of the coronavirus Spike protein to inhibit coronavirus replication. In particular embodiments, the inhibitors include Five-Helix proteins, HR2 peptides, HR1 peptides, HR1 chimeric peptides. The present invention also features retro-inverso analogue of the coronavirus inhibitors, coronavirus inhibitors containing one or more tryptophan analogs, and / or one or more lactam bridges.



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